AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-9 (Canceled).

10. (Canceled)

11. (Currently Amended) A method for localizing one or more sources, each source (emitters) being in motion relative to a network of sensors, the method comprising the steps of:

separating the sources in order to identify the direction vectors associated with the response of the sensors to a source at a given incidence, said incidence angles varying depending on the position of the sensors network relative to said sources;

associating direction vectors $a_{1m}...a_{Km}$ obtained for the m^{th} transmitter and respectively at the instants $t_1...t_K$, are associated during a period Dt in order to separate different sources for each instant $t_1…t_K$, said incidence angles varying depending on the position of the sensors network relative to said sources;

wherein the direction vectors $a_{1m}...a_{Km}$ obtained for the mobile sources and respectively for the instants $t_1…t_K$ are associated during the period Dt in order to separate the different sources for each instant $t_1…t_K$ the position (x_m, y_m, z_m) of the mobile emitter is directly localized from the direction vectors $a_{1m}...a_{Km}$ associated to a same emitter, one emitter being obtained from the different instants t_k;

~~The method according to claim 10,~~ wherein the associating step comprises:

Step ASE – 1 : Initialization of the process at a given value k.

Step ASE – 2 : For $1 \le m \le M$ determining the indices $i(m)$ in using the relationship $d(a_{km}, b_{i(m)}) = \min_{1 \le i \le M} [d(a_{km}, b_i)]$, the <u>direction</u> vector $a_{k,m}$ and the vectors b_i identified at the instant t_{k+1} for ($1 \le i \le M$), setting up a function $\beta_m(t_k) = d(a_{km}, a_{om})$, wherein $d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{|\boldsymbol{u}^H \boldsymbol{v}|^2}{(\boldsymbol{u}^H \boldsymbol{u})(\boldsymbol{v}^H \boldsymbol{v})}$

Step ASE – 3 : For $1 \le m \le M$ performing the operation $a_{k+1\,m} = b_{i(m)}$,

Step ASE – 4 : Incrementing $k \leftarrow k+1$ and if $k<K$ returning to the step ASE-1,

Step ASE – 5 : Starting from the family of instants $\Phi = \{ t_1 < \ldots < t_K \}$ thus obtained, extracting the instants t_i which do not belong to a zone defined by the curve $\beta_m(t_k)$ and a zone of tolerance;

where M is the number of transmitters.

12. (Currently Amended) The method according to claim [[10]] <u>11</u>, wherein the localizing step comprises:

a normalized vector correlation $L_K(x,y,z)$ maximizing in the space (x,y,z) of the position of a transmitter with

$$L_K(x,y,z) = \frac{\left|\mathbf{b}_K^{\,H} \mathbf{v}_K(x,y,z)\right|^2}{\left(\mathbf{b}_K^{\,H} \mathbf{b}_K\right)\left(\mathbf{v}_K(x,y,z)^H \mathbf{v}_K(x,y,z)\right)}$$

with

$$\mathbf{b}_K = \begin{bmatrix} \mathbf{b}_{1m} \\ \vdots \\ \mathbf{b}_{Km} \end{bmatrix} = \mathbf{v}_K(x_m, y_m, z_m) + \mathbf{w}_K \ , \quad \mathbf{v}_K(x,y,z) = \begin{bmatrix} \mathbf{b}(t_1, x, y, z) \\ \vdots \\ \mathbf{b}(t_K, x, y, z) \end{bmatrix}$$

and $\mathbf{w}_K = \begin{bmatrix} \mathbf{w}_{1m} \\ \vdots \\ \mathbf{w}_{Km} \end{bmatrix}$

where W_K is the noise vector for all the positions (x, y, z) of a transmitter; and

wherein the vector b_K comprises a vector representing the noise, the components of which are functions of the components of the direction vectors $a_{1m} \dots a_{Km}$.

13. (Canceled)

14. (Previously Presented) The method according to claim 11,wherein comprising:

a step in which the matrix of covariance $R=E[w_K w_K^H]$ of the noise vector is determined and in that the following criterion is maximized :

$$L_K'(x,y,z)=\frac{\left|\mathbf{b}_K{}^{\mathrm{H}}\,\mathbf{R}^{-1}\,\mathbf{v}_K(x,y,z)\right|^2}{\left(\mathbf{b}_K{}^{\mathrm{H}}\mathbf{R}^{-1}\mathbf{b}_K\right)\left(\mathbf{v}_K(x,y,z)^{\mathrm{H}}\,\mathbf{R}^{-1}\mathbf{v}_K(x,y,z)\right)}$$

Where v_x is a speed vector and b_k is vector for source separation and source identification.

15. (Previously Presented) Method according to claim 11, wherein the evaluation of the criterion $L_K(x,y,z)$ and/or of the criterion $L_K'(x,y,z)$ is recursive.

16. (Previously Presented) The method according to claim 11, wherein it comprises a step of comparison of the maximum values with a threshold value.

17. (Previously Presented) The method according to claim 11, wherein the value of K is initially fixed at K_0.

18. (Currently Amended) The method according to claim 11, wherein the transmitters to be localized are mobile and in that the direction vector considered is parameterized by the position of the transmitter to be localized and the speed vector.